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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,685	06/09/2005	Masaaki Okubo	122655	1395

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P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

GREENE, JASON M

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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01/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,685

Applicant(s)

OKUBO ET AL.

Examiner

Jason M. Greene

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 12-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 12-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/3/05;8/22/05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claims

1. With regard to claim 1, the Examiner suggests Applicants rewrite the phrase "placed being faced each other by sandwiching the honeycomb filter there" in line 9 as "being placed facing each other by sandwiching the honeycomb filter therebetween" to improve the readability of the claim language.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 12 and 25-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Application Publication JP 6-146852.

JP 6-146852 discloses an exhaust gas treatment apparatus placed in an exhaust system of a combustion gas of a diesel engine and used for collecting and removing particulate matter contained in an exhaust gas comprising a casing (5) connected to the

exhaust system (2) to serve as a main flow path of an exhaust gas, a honeycomb filter (6) placed in the inside of the casing in such a manner that interrupts the main flow path, the honeycomb filter having a plurality of cells partitioned by partition walls to serve as filter flow paths of the exhaust gas and collecting the particulate matter contained in the exhaust gas, and plasma generation electrodes (8,9) composed of a pulse electrode and an earth electrode placed facing each other by sandwiching the honeycomb filter therebetween, such that at least one of the electrodes is in contact with the honeycomb filter, the plasma generation electrodes being capable of generating nonthermal plasma between the pulse electrode and the earth electrode, wherein particulate matter contained in the exhaust gas flowing into the casing is collected by the honeycomb filter, nitrogen monoxide contained in the exhaust gas is oxidized to nitrogen dioxide by the nonthermal plasma generated between the electrodes, combustible materials in the particulate matter collected and deposited on the surface of the partition walls are removed through oxidation by the nitrogen dioxide produced and, thereby, the honeycomb filter can be regenerated, and further comprising a power source (10) to apply a voltage to the pulse electrode, wherein a current supplied from the power source is an alternating current with a peak voltage of 3-5 kV and a frequency of at least 50 Hz in Figs. 1-6, the English language abstract and paragraphs [0007] to [0037] of the English language machine translation.

4. Claims 1-3, 12-14, 21-24, 27 and 28 are rejected under 35 U.S.C. 102(a) as being anticipated by Japanese Patent Application Publication JP 2002-213228.

JP 2002-213228 discloses an exhaust gas treatment apparatus placed in an exhaust system of a combustion gas of a diesel engine and used for collecting and removing particulate matter contained in an exhaust gas comprising a casing (1) connected to the exhaust system to serve as a main flow path of an exhaust gas, a honeycomb filter (70) placed in the inside of the casing in such a manner that interrupts the main flow path, the honeycomb filter having a plurality of cells partitioned by partition walls to serve as filter flow paths of the exhaust gas and collecting the particulate matter contained in the exhaust gas, and plasma generation electrodes (3) composed of a pulse electrode and an earth electrode placed facing each other by sandwiching the honeycomb filter therebetween, such that at least one of the electrodes is in contact with the honeycomb filter, the plasma generation electrodes being capable of generating nonthermal plasma between the pulse electrode and the earth electrode, wherein particulate matter contained in the exhaust gas flowing into the casing is collected by the honeycomb filter, nitrogen monoxide contained in the exhaust gas is oxidized to nitrogen dioxide by the nonthermal plasma generated between the electrodes, combustible materials in the particulate matter collected and deposited on the surface of the partition walls are removed through oxidation by the nitrogen dioxide produced and, thereby, the honeycomb filter can be regenerated, and further comprising a power source (4) to apply a voltage to the pulse electrode, wherein the plasma generation electrodes are placed on outer perimeter surfaces of the honeycomb filter by a printing method through the use of a metal paste, wherein a catalyst is held on the surface of the partition walls, and further comprising a NO_x treatment device on the

downstream side of the casing in Figs. 1-10, the English language abstract and paragraphs [0004] to [0033] of the English language machine translation.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication JP 6-146852 or Japanese Patent Application Publication JP 2002-213228 in view of Ichikawa et al. (US 5,595,581).

JP 6-146852 and JP 2002-213228 do not explicitly recite the specific ceramic materials used to form the honeycomb filter or the specific configuration of the honeycomb filter, but Ichikawa et al. discloses a similar honeycomb filter comprising cordierite and having the recited configuration in Figs. 1-3 and col. 4, line 34 to col. 6, line 24.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cordierite of Ichikawa et al. into the apparatus of JP 6-146852 or JP 2002-213228 in that such is a well known material in the art for producing honeycomb exhaust filters. It would have been obvious to one of ordinary skill

in the art at the time the invention was made to incorporate the honeycomb configuration of Ichikawa et al. into the apparatus of JP 6-146852 or JP 2002-213228 to provide a honeycomb filter having a configuration optimized for diesel engine exhaust filtration.

7. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication JP 6-146852 or Japanese Patent Application Publication JP 2002-213228 in view of Japanese Patent Application Publication JP 5-256124.

JP 6-146852 and JP 2002-213228 do not teach a dehydration device being provided on the upstream side of the casing in order to remove water contained in at least a part of the exhaust gas flowing into the casing, but JP 5-256124 discloses a similar system having a dehydration device (13) in Fig. 1, the English language abstract and paragraph [0019] of the English language machine translation.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the dehydration device of JP 5-256124 into the apparatus of JP 6-146852 or JP 2002-213228 to remove excess moisture and improve operation of the exhaust purification device, as suggested by JP 5-256124 in paragraphs [0019] and [0028] of the English language machine translation.

Conclusion

Application/Control Number:
10/523,685
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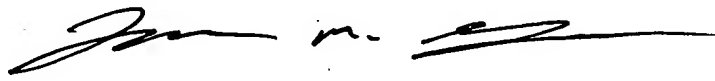
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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason M. Greene
Primary Examiner
Art Unit 1797


1/18/08

jmg
January 18, 2008